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## **Claims**

## What is claimed is:

- 5 1. An integrated circuit (IC) cover comprising:
  - a plate portion;
  - an attachment portion; and
  - a spring portion coupled to the plate portion and to the attachment portion.
- 10 2. The IC cover of claim 1 wherein the IC cover is unitarily molded of a polymer material.
  - 3. The IC cover of claim 2 wherein the polymer material has a thermal conductivity of at least 10 watts/meter Kelvin.
  - 4. The IC cover of claim 2 further comprising:a heat sink portion coupled to the plate portion.
  - 5. The IC cover of claim 4 wherein the heat sink portion includes extended surfaces.
  - 6. The IC cover of claim 5 wherein the extended surfaces include fins.
- 7. The IC cover of claim 1 wherein the attachment portion comprises:

  a retainer having a first retainer portion and a second retainer portion, the retainer

  defining a channel between the first retainer portion and the second retainer portion, the

  first retainer portion terminating in a first barb and the second retainer portion

  terminating in a second barb.
- 8. The IC cover of claim 1 wherein the spring portion has a cross section comprising a V-shaped portion.

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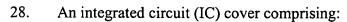
- 9. The IC cover of claim 8 wherein the spring portion has a cross section comprising a zig-zag-shaped portion.
- 10. The IC cover of claim 1 wherein the spring portion has a cross section comprising
  a U-shaped portion.
  - 11. The IC cover of claim 1 wherein the spring portion has a cross section comprising an arcuate portion.
- 10 12. The IC cover of claim 11 wherein the spring portion has a cross section comprising an S-shaped portion.
  - 13. The IC cover of claim 1 wherein the spring portion has a cross section comprising a molded living hinge portion.
  - 14. The IC cover of claim 1 wherein the spring portion has a cross section comprising a molded cantilever hinge portion.
  - 15. The IC cover of claim 1 wherein the spring portion is disposed at an end of the plate portion.
  - 16. The IC cover of claim 1 wherein the spring portion includes a plurality of individual spring elements, wherein a first one of the plurality of individual spring elements is disposed at a first end of the plate portion and a second one of the plurality of individual spring elements is disposed at a second end of the plate portion.
  - 17. The IC cover of claim 16 wherein the plurality of individual spring elements are disposed around a perimeter of the plate portion.
- 18. The IC cover of claim 16 wherein at least one of the individual spring elements is maintained in a non-relaxed state.

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- 19. The IC cover of claim 1 wherein the spring portion is disposed around the perimeter of the plate portion.
- 5 20. The IC cover of claim 1 wherein the spring portion forms a closed path around the perimeter of the plate portion.
  - 21. The IC cover of claim 1 wherein the spring portion comprises a uniform diaphragm spring.
  - 22. The IC cover of claim 1 further comprising:a heat sink portion coupled to the plate portion.
  - 23. The IC cover of claim 22 wherein the heat sink portion includes extended surfaces.
  - 24. The IC cover of claim 23 wherein the extended surfaces include fins.
  - 25. The IC cover of claim 1 wherein the plate portion and the spring portion are unitarily formed of a metal material.
    - 26. The IC cover of claim 1 wherein the attachment portion and the spring portion are unitarily molded of a polymer material.
- 25 27. The IC cover of claim 1 wherein the plate portion is formed to have an arcuate cross section so as to substantially equalize pressure exerted against a convex surface of the plate portion.

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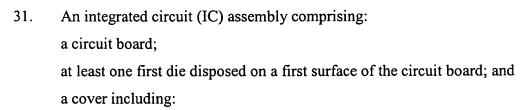


an attachment portion adapted to be coupled to a circuit board, wherein at least one die is coupled to the circuit board; and

a plate portion of flexible material coupled to the attachment portion, wherein the plate portion is formed in a pre-loaded shape so as to exert pressure to the at least one die when the attachment portion is coupled to the circuit board.

- 29. The IC cover of claim 28 wherein the plate portion is formed so as to exert pressure to the at least one die in a direction toward the circuit board.
- 30. The IC cover of claim 29 further comprising:a spring portion coupling the attachment portion to the plate portion.

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a plate portion disposed so as to cover the at least one first die; an attachment portion attached to the circuit board; and a spring portion coupled to the plate portion and to the attachment portion.

- 32. The IC assembly of claim 31 wherein the spring portion exerts pressure between the plate portion and the at least one first die.
  - 33. The IC assembly of claim 32 wherein, when the attachment portion is coupled to the circuit board, the spring portion is in a non-relaxed position.
- The IC assembly of claim 31 further comprising: at least one second die disposed on a second surface of the circuit board.
  - 35. The IC assembly of claim 34 further comprising:
    a second cover attached to the circuit board, the second cover covering the at least one second die.

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- 36. An integrated circuit (IC) cover comprising:
  - a plate portion having a plurality of edges;
  - a plurality of attachment portions; and
- a plurality of spring portions coupled to the plate portion and to the plurality of attachment portions, wherein each of the spring portions is oriented along a direction of a corresponding one of the plurality of edges.
  - 37. The IC cover of claim 36 wherein center lines of the plurality of spring portions are oriented so as to be non-radial relative to a centroid of the plate portion.
  - 38. The IC cover of claim 36 wherein each of center lines of the plurality of spring portions are oriented approximately tangentially in relation to a corresponding one of the plurality of edges.
- 15 39. The IC cover of claim 36 wherein the plurality of spring portions are oriented in a similar rotational direction with respect to a centroid of the plate portion.
  - 40. The IC cover of claim 36 wherein the plurality of spring portions are configured to cooperatively accommodate displacement of the plate portion from a relaxed position.
  - 41. The IC cover of claim 36 wherein at least one of the plurality of spring portions is maintained in a non-relaxed state when at least one of the plurality of attachment portions is coupled to a circuit board such that the plate portion overlies at least one IC.